

ACTA RADIOLOGICA

FOUNDED IN 1921 BY GÖSTA FORSELL

OFFICIAL ORGAN OF THE RADIOLOGICAL SOCIETIES OF DENMARK, FINLAND, NORWAY AND SWEDEN

EDITOR
ERIK LINDGREN

ASSOCIATE EDITORS
ULF RUDHE ULF BERGVALL

ADVISORY BOARD

Diagnostic radiology OLLE OLSSON
Therapeutic radiology LARS-GUNNAR LARSSON
Radiation physics KURT LIDÉN
Radiation biology BÖRJE LARSSON

EDITORIAL BOARD

Denmark G. THOMSEN S. KAAE,
Finland P. VIRTAMA L. R. HOLSTI,
Norway J. FRIMANN-DAHL E. POPPE,
Sweden L.-G. LARSSON O. BARTLEY,

THERAPY PHYSICS BIOLOGY

INDICES to Vol. 11 (1972)

February April June August October December

Contents of Volume 11 — THERAPY PHYSICS BIOLOGY

Quantitative effects of ^{131}I on different tissue components in foetal and goitrogen challenged mouse thyroids	1
By G. WALINDER	
Dose rate dependence in the goitrogen stimulated mouse thyroid — A comparative investigation of the effects of roentgen, ^{131}I and ^{132}I irradiation	24
By G. WALINDER, C.-J. JONSSON and ANNE-MARIE SJÖDÉN	
Immunoglobulins in carcinoma of the uterine cervix	37
By S. PLESNIČAR	
Function of the reticuloendothelial system in whole-body irradiated mice	48
By B. E. SCHILDT and K.-H. ERIKSSON	
Mitotic index in human squamous cell carcinoma	59
By R. SEALY, ANITA IMMERMAN and B. SHEPSTONE	
Method of staging system construction	65
By S. S. KUROHARA, F. W. GEORGE III, V. VONGTAMA and J. H. WEBSTER	
Antibodies to a HeLa cell line in carcinoma of the cervix uteri — The effect of radiation therapy	83
By NINA EINHORN and J. JONSSON	
Automatic production of isodose curves	90
By O. KALNAES and J. MUNK	
Physical measurements including depth dose data and isodose curves for 8 MV roentgen rays	97
By S. K. AGARWAL, R. V. SCHEELE and J. WAKLEY	
Concepts W and G used in radiation dosimetry — Comments on current definitions	106
By C. A. CARLSSON	
Correction of isodose-diagrams for ^{60}Co and 35 MeV electrons at penetration of lung tissue	113
By ULLA-BRITA NORDBERG	
Immobilisation, compensation and field shaping in megavolt therapy	129
By N. E. SØRENSEN and A. SELL	
Digital stereoscintigraphic experiments with a gamma-camera	135
By E. I. LARSSON	
Determination of small mass differences in roentgenography — II — Experimental investigations with a roentgen diffraction apparatus	145
By L. HOLLENDER and G. LYSSELL	
Computerized treatment planning and inhomogeneities	161
By R. F. NELSON	
Treatment of inoperable pulmonary tumours with high-energy electrons	172
By T. LANDBERG, ULLA-BRITA NORDBERG, H. OLIVECRONA, M. LINDGREN and H. HENRIKSON	

CONTENTS OF VOLUME 11 — THERAPY PHYSICS BIOLOGY	III
European trial on therapy of nephroblastoma	192
Clinical and cytogenetic investigation in children of parents treated with radioiodine By J. EINHORN, MAJ HULTÉN, J. LINDSTEN, HARRIET WICKLUND and P. ZETTERQVIST	193
Cervical plexus lesions following post-operative radiation therapy of mammary carcinoma By P. WESTLING, H. SVENSSON and P. HELE	209
Value of pelvic pneumography in gynecologic brachytherapy By I. J. WEIGENBERG	217
Haemopoietic aspects of the changes in the natural radiation resistance of mice after hypoxia By M. BERAN and B. TRIBUKAIT	225
Preparation methods of liver and lung radiopharmaceuticals with $^{85}\text{Sr}^m$, $^{99}\text{Tc}^m$ and $^{113}\text{In}^m$ By P.-E. ÅSARD and INGEBORG BOIS-SVENSSON	240
Effect of irradiation on the release of lymphocytes from the thymus By U. ERNSTRÖM	257
Reduction in strontium absorption in pregnant, lactating and suckling rats By K. KOSTIAL, N. GRUDEN, A. DURAKOVIĆ, V. JUVANČIĆ and I. SIMONOVIĆ	277
Books received	288
Determination of dose distribution in the pelvis by measurement and by computer in gynecologic radiation therapy By I. JOELSSON, B. I. RUDÉN, A. COSTA, ANDRÉE DUTREIX and J. C. ROSENWALD	289
General equation for the calculation of nominal standard dose By R. L. DIXON	305
Selenium labelled toluidine blue as an agent for parathyroid scanning—Theoretic considerations By T. G. BRIEN	312
Incidence of pulmonary carcinoma in Iceland between 1931 and 1964 By G. FR. PETERSEN	321
Current status of intrathecal radiogold in the treatment of medulloblastoma By L. H. A. GOLD, S. A. KIEFFER, G. J. D'ANGIO, V. T. FALLON and D. M. LONG	329
Attempt to modify the ionizing radiation induced histopathologic effects on the central nervous system by reserpine administration By N. I. HARIRI, Y. AKSU, S. FALAKALI and O. I. TUNCER	341
Effect of ionizing radiation on nuclear energy transduction in normal and neoplastic glia—A quantitative cytochemical investigation By W. M. KIRSCH, D. SCHULZ, E. FUCHS and P. NAKANE	349
Atrophy following radiation therapy for central nervous system neoplasms By G. H. WILSON, J. BYFIELD and W. N. HANAFEE	361
Intracavitary radium treatment of malignant tumours of the urinary bladder By M. PEDERSEN and S. E. HERTING	369
Radiologic pulmonary changes following cobalt 60 treatment of mammary carcinoma By S. HAGEN and A. KOLBENSTVEDT	386
Intraarterial distribution of colloidal bismuth compounds injected in man By G. LUNDELL	395
Effect of subcutaneous fat on bone mineral content measurements with the 'single-energy' photon absorptiometry technique By L. ZEITZ	401

Carcinoma of the thyroid in children and young adults — A review of 52 patients By BERTA JEREB and T. LÖWHAGEN	411
Virus particles in relation to radiation-induced changes in the thymus of C ₅ H mice By B. JÄRPLID	422
Late effects of irradiation on the thyroid gland in mice—I — Irradiation of adult mice By G. WALINDER	433
Effect of 180 MeV proton or ⁶⁰ Co gamma radiation on the incorporation of ¹²⁵ I-iodo-2'-deoxyuridine into intestinal and splenic deoxyribonucleic acid of mice By K. J. JOHANSON and B. LARSSON	452
Retention of ¹²⁵ I given as ¹²⁵ I-5-iodo-2'-deoxyuridine to mice after 180 MeV proton or ⁶⁰ Co gamma irradiation By K. J. JOHANSON	465
Effect of incorporated ²²⁶ Ra on colony forming units of bone marrow and spleen in mice By V. SVOBODA and V. KLENER	472
Involution and recovery of the thymus and spleen of the Mongolian gerbil following roentgen irradiation By J. L. MONTOUR and R. C. RILEY	481
Effects of fractionated doses of electrons on human skin By S. BELLETTI and G. TUNESI	490
Thyroid radionuclide uptake measurements—Report of a panel of experts of the International Atomic Energy Agency	501
Influence of ionizing radiation on ciliary cell activity in the respiratory tract By K. FUJIWARA, C. H. HÄKANSSON and N. G. TOREMALM	513
Radiation sensitivity of tissues irradiated during mantle treatment of Hodgkin's disease By T. LANDBERG, L. BALDETORP, L. G. LINDBERG and GUDRUN SVAHN-TAPPER	521
Thymic shielding in irradiated mice By B. JÄRPLID	536
Closed stereotaxic hypophysectomy by means of ⁶⁰ Co gamma radiation By E. O. BACKLUND, T. RÄHN, B. SARBY, A. DE SCHRYVER and J. WENNERSTRAND	545
Effects of ⁶⁰ Co gamma radiation on the distribution, catabolism and incorporation of ¹²⁵ I-5-iodo-2'-deoxyuridine into intestinal and splenic deoxyribonucleic acid in mice By K. J. JOHANSON	556
Comparison of tumor uptake and kinetics of different radiopharmaceuticals under experimental conditions By D. EMRICH, A. VON ZUR MÜHLEN, F. WILLGEROTH and A. LAMMICH	566
Late effects of irradiation on the thyroid gland in mice — II — Irradiation of mouse foetuses By G. WALINDER and ANNE-MARIE SJÖDÉN	577
Modification of isodose curves by means of compensating filters By N. E. SØRENSEN	590
Angular distribution of radiation scattered from a phantom exposed to 10 to 50 kVp roentgen rays By D. M. J. BENSTOCK and T. E. BURLIN	593
Procedures in radiation therapy dosimetry with 5 to 50 MeV electrons and roentgen and gamma rays with maximum photon energies between 1 and 50 MeV—Recommendations by the Nordic Association of Clinical Physics	603

Subject index to Volume 11 — Therapy Physics Biology

Radiation therapy

Immunoglobulins in carcinoma of the uterine cervix	37
Method of staging system construction	65
Antibodies to a HeLa cell line in irradiated carcinoma of the cervix uteri	83
Computerized treatment planning and inhomogeneities	161
Treatment of inoperable pulmonary tumours with high-energy electrons	172
European trial on therapy of nephroblastoma	192
Clinical and cytogenetic investigation in children of parents treated with radioiodine	193
Cervical plexus lesions following post-operative radiation therapy of mammary carcinoma	209
Pelvic pneumography in gynecologic brachytherapy	217
Determination of dose distribution in the pelvis by measurement and by computer in gynecologic radiation therapy	289
Incidence of pulmonary carcinoma in Iceland between 1931 and 1964	321
Intrathecal radiogold in the treatment of medulloblastoma	329
Attempt to modify the ionizing radiation induced histopathologic effects on the central nervous system by reserpine	341
Atrophy following radiation therapy for central nervous system neoplasms	361
Intracavitary radium treatment of malignant tumours of the urinary bladder	369
Radiologic pulmonary changes following cobalt 60 treatment of mammary carcinoma	386
Carcinoma of the thyroid in children and young adults	411
Effects of fractionated doses of electrons on human skin	490
Radiation sensitivity of tissues irradiated during mantle treatment of Hodgkin's disease	521
Closed stereotaxic hypophysectomy by means of ^{60}Co gamma radiation	545

Radioactive isotopes

Quantitative effects of ^{131}I on foetal and goitrogen challenged mouse thyroids	1
Dose rate dependence in the goitrogen stimulated mouse thyroid — Effects of roentgen, ^{131}I and ^{132}I irradiation	24
Digital stereoscintigraphic experiments with a gamma-camera	135
Clinical and cytogenetic investigation in children of parents treated with radioiodine	193
Preparation methods of liver and lung radiopharmaceuticals with $^{85}\text{Sr}^m$, $^{99}\text{Tc}^m$ and $^{113}\text{In}^m$	240
Selenium labelled toluidine blue as an agent for parathyroid scanning	312

Intrathecal radiogold in the treatment of medulloblastoma	329
Intracavitory radium treatment of malignant tumours of the urinary bladder	369
Radiologic pulmonary changes following bismuth compounds	395
Effect of 180 MeV proton or ^{60}Co gamma radiation on the incorporation of ^{125}I -iodo-2'-deoxyuridine into intestinal and splenic deoxyribonucleic acid in mice	452
Retention of ^{125}I given as ^{125}I -5-iodo-2'-deoxyuridine to mice after 180 MeV proton or ^{60}Co gamma irradiation	465
Effect of incorporated ^{226}Ra on colony forming units of bone marrow and spleen in mice	472
Thyroid radionuclide uptake measurements	501
Closed stereotaxic hypophysectomy by means of ^{60}Co gamma radiation	545
Effects of ^{60}Co gamma radiation on the distribution, catabolism and incorporation of ^{125}I -5-iodo-2'-deoxyuridine into intestinal and splenic deoxyribonucleic acid in mice	556
Tumor uptake and kinetics of different radiopharmaceuticals under experimental conditions	566

Radiation physics

Automatic production of isodose curves	90
Depth dose data and isodose curves for 8 MeV roentgen rays	97
Concepts W and G used in radiation dosimetry	106
Correction of isodose-diagrams for ^{60}Co and 35 MeV electrons at penetration of lung tissue	113
Immobilisation, compensation and field shaping in megavolt therapy	129
Digital stereoscintigraphic experiments with a gamma-camera	135
Determination of small mass differences in roentgenography	145
Determination of dose distribution in the pelvis by measurement and by computer in gynecologic radiation therapy	289
General equation for the calculation of nominal standard dose	305
Effect of subcutaneous fat on bone mineral content measurement with the 'single-energy' photon absorptiometry technique	401
Modification of isodose curves by means of compensating filters	590
Angular distribution of radiation scattered from a phantom exposed to 10 to 60 kVp roentgen rays	593
Procedures in radiation therapy dosimetry	603

Technique

Method of staging system construction	65
Digital stereoscintigraphic experiments with a gamma-camera	135
Determination of small mass differences in roentgenography	145
Computerized treatment planning and inhomogeneities	161
Preparation methods of liver and lung radiopharmaceuticals with $^{85}\text{Sr}^m$, $^{99}\text{Tc}^m$ and $^{113}\text{In}^m$	240
Selenium labelled toluidine blue as an agent for parathyroid scanning	312
Attempt to modify the ionizing radiation induced histopathologic effects on the central nervous system by reserpine	341
Effect of subcutaneous fat on bone mineral content measurements with the 'single-energy' photon absorptiometry technique	401

Radiation biology

Quantitative effects of ^{131}I on foetal and goitrogen challenged mouse thyroids	24
Dose rate dependence in the goitrogen stimulated mouse thyroid — Effects of roentgen, ^{131}I and ^{132}I irradiation	37
Immunoglobulins in carcinoma of the uterine cervix	48
Function of the reticuloendothelial system in whole-body irradiated mice	59
Mitotic index in human squamous cell carcinoma	193
Clinical and cytogenetic investigation in children of parents treated with radioiodine . .	257
Effect of irradiation on the release of lymphocytes from the thymus	288
Strontium absorption in pregnant, lactating and suckling rats	349
Effect of ionizing radiation on nuclear energy transduction in normal and neoplastic glia	422
Virus particles in relation to radiation-induced changes in the thymus of C_5H mice . .	433
Late effects of irradiation on the thyroid gland in mice—I—Adults	452
Effect of 180 MeV proton or ^{60}Co gamma radiation on the incorporation of ^{125}I -iodo-2'-deoxyuridine into intestinal and splenic deoxyribonucleic acid of mice	465
Retention of ^{125}I given as ^{125}I -5-iodo-2'-deoxyuridine to mice after 180 MeV proton or ^{60}Co gamma irradiation	472
Effect of incorporated ^{226}Ra on colony forming units of bone marrow and spleen in mice . .	481
Involution and recovery of the thymus and spleen of the Mongolian gerbil following roentgen irradiation	490
Effects of fractionated doses of electrons on human skin	513
Influence of ionizing radiation on ciliary cell activity in the respiratory tract	521
Radiation sensitivity of tissues irradiated during mantle treatment of Hodgkin's disease	536
Thymic shielding in irradiated mice	556
Effects of ^{60}Co gamma radiation on the distribution, catabolism and incorporation of ^{125}I -5-iodo-2'-deoxyuridine into intestinal and splenic deoxyribonucleic acid in mice	566
Tumor uptake and kinetics of different radiopharmaceuticals under experimental conditions	577
Late effects of irradiation on the thyroid gland in mice—II—Foetuses	321
	361

Miscellaneous

Incidence of pulmonary carcinoma in Iceland between 1931 and 1964	321
Atrophy following radiation therapy for central nervous system neoplasms	361

List of Authors

Agarwal S. K. 97 Aksu Y. 341 Åsard P.-E. 240	Herting S. E. 369 Hollender L. 145 Hultén Maj 193	Pedersen M. 369 Petersen G. Fr. 321 Plesničar S. 37
Backlund E. O. 545 Balderup L. 521 Belletti S. 490 Benstock D. M. J. 593 Beran M. 225 Bois-Svensson Ingeborg 240 Brien T. G. 312 Burlin T. E. 593 Byfield J. 361	Immerman Anita 59 Järplid B. 422, 536 Jereb Berta 411 Joelsson I. 289 Johanson K. J. 452, 465, 556 Jonsson C.-J. 24 Jonsson J. 83 Juvančić V. 277	Rähn T. 545 Riley R. C. 481 Rosenwald J. C. 289 Rudén B. I. 289
Carlsson C. A. 106 Costa A. 289	Kalnaes O. 90 Kieffer S. A. 329 Kirsch W. M. 349 Klener V. 472 Kolbenstvedt A. 386 Kostial K. 277 Kurohara S. S. 65	Sarby B. 545 Scheele R. V. 97 Schildt B. E. 48 Schulz D. 349 de Schryver A. 545 Sealy R. 59 Sell A. 129 Shepstone B. 59 Šimonović I. 277 Sjödén Anne-Marie 24, 577 Sørensen N. E. 129, 590 Svahn-Tapper Gudrun 521 Svensson H. 209 Svoboda V. 472
D'Angio G. J. 329 Dixon R. L. 305 Duraković A. 277 Dutreix Andrée 289	Lammich A. 566 Landberg T. 172, 521 Larsson B. 452 Larsson E. I. 135 Lindberg L. G. 521 Lindgren M. 172 Lindsten J. 193 Long D. M. 329 Löwhagen T. 411 Lundell G. 395 Lysell G. 145	Toremalm N. G. 513 Tribukait B. 225 Tuncer O. I. 341 Tunesi G. 490
Einhorn J. 193 Einhorn Nina 83 Emrich D. 566 Eriksson K.-H. 48 Ernström U. 257	Montour J. L. 481 von zur Mühlen A. 566 Munk J. 90	Vongtama V. 65
Falakali S. 341 Fallon V. T. 329 Fuchs E. 349 Fujiwara K. 513	Nakane P. 349 Nelson R. F. 161 Nordberg Ulla-Brita 113, 172 Olivecrona H. 172	Wakley J. 97 Walinder G. I. 24, 433, 577 Webster J. H. 65 Weigensberg I. J. 217 Wernerstrand J. 545 Westling P. 209 Wicklund Harriet 193 Willgeroth F. 566 Wilson G. H. 361
George III F. W. 65 Gold L. H. A. 329 Gruden N. 277		Zeitz L. 401 Zetterqvist P. 193
Hagen S. 386 Håkansson C. H. 513 Hanafee W. N. 361 Hariri N. I. 341 Hele P. 209 Henrikson H. 172		

